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L1: Entry 2 of 2

File: USPT

Apr 10, 2001

US-PAT-NO: 6214540

DOCUMENT-IDENTIFIER: US 6214540 B1

TITLE: Chemokines that inhibit immunodeficiency virus infection and methods based thereon

DATE-ISSUED: April 10, 2001

## INVENTOR-INFORMATION:

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APPL-NO: 8/ 826133

DATE FILED: March 26, 1997

INT-CL: [7] C12Q 1/70, A61K 45/00, A01N 43/04, C07K 1/00

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FIELD-OF-SEARCH: 424/85.1, 424/85.2, 424/185.1, 424/192.1, 424/195.11, 435/5, 435/7.2, 435/7.24, 514/44, 530/351, 530/395, 536/23.4, 536/23.5

PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

☐ **Search Selected****Search ALL**

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/> <u>5141867</u>	August 1992	Ivanoff et al.	435/252.3

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
WO 90/07119	June 1990	WOX	
WO 91/09872	July 1991	WOX	
WO 92/22654	December 1992	WOX	
WO 93/03735	March 1993	WOX	

## OTHER PUBLICATIONS

Genbank Acc. No. U64197.

SWISS-PROT: P48061.

Alkhatib et al., 1996, "CC CKR5: A RANTES, MIP-1.alpha., MIP-1.beta. receptor as a fusion cofactor for macrophage-tropic HIV-1", *Science* 272:1955-1958.

Baggiolini et al., 1994, "Interleukin-8 and related chemotactic cytokines-CXC and CC chemokines", *Adv. in Immunol.* 55:97-179.

Barin et al., 1985, "Virus envelope protein of HTLV-III represents major target antigen for antibodies in AIDS patients", *Science* 228:1094-1096.

Barre-Sinoussi et al., 1983, "Isolation of a T-Lymphotropic retrovirus from a patient at risk for acquired immune deficiency syndrome (AIDS)", *Science* 220:868-870.

Beall et al., 1992, "Conversion of monocyte chemoattractant protein-1 into a neutrophil attractant by substitution of two amino acids", *J. Biol. Chem.* 267:3455-3459.

Bischoff et al., 1993, "RANTES and related chemokines activate human basophil granulocytes through different G protein-coupled receptors", *Eur. J. Immunol.* 23:761-767.

Blazevic et al., 1995, "Helper and cytotoxic T cell responses of HIV type 1-Infected individuals to synthetic peptides of HIV type 1 rev", *AIDS Res. & Hum Retroviruses* 11:1335-1342.

Charo et al., 1994, "Molecular cloning and functional expression of two monocyte chemoattractant protein 1 receptors reveals alternative splicing of the carboxyl-terminal tails", *Proc. Natl. Acad. Sci. USA* 91:2752-2756.

Cheng-Mayer et al., 1991, "Host range, replicative, and cytopathic properties of human immunodeficiency virus type 1 are determined by very few amino acid changes in tat and gp120", *J. Virol.* 65:6931-6941.

Choe et al., 1996, "The .beta.-Chemokine receptors CCR3 and CCR5 facilitate infection by primary HIV-1 isolates", *Cell* 85:1135-1148.

Clavel et al., 1986, "Isolation of a new human retrovirus from west african patients with AIDS", *Science* 233:343-346.

Cocchi et al., 1995, "Identification of RANTES, MIP-1.alpha., and MIP-1.beta. as the major HIV-Suppressive factors produced by CD8+ T cells", *Science* 270:1811-1815.

Cocchi et al., 1996, "The V3 domain of the HIV-1 gp120 envelope glycoprotein is critical for chemokine-mediated blockade of infection", *Nature Med.* 2:1244-1247.

Daar et al., 1990, "High concentrations of recombinant soluble CD4 are required to neutralize primary human immunodeficiency virus type 1 isolates", *Proc. Natl. Acad. Sci. USA* 87:6574-6579.

Dalglish et al., 1984, "The CD4 (T4) antigen is an essential component of the receptor for the AIDS retrovirus", *Nature* 312:763-767.

Daugherty et al., 1996, "Cloning expression, and characterization of the human eosinophil eotaxin receptor", *J. Exp. Med.* 183:2349-2354.

Deng et al., 1996, "Identification of a major co-receptor for primary isolates of HIV-1", *Nature* 381:661-666.

Doranz et al., 1996, "A dual-tropic primary HIV-1 isolate that uses fusin and the .beta.-chemokine receptors CKR-5, CKR-3, and CKR-2b as fusion cofactors", *Cell* 85:1149-1158.

Dragic et al., 1996, "HIV-1 entry into CD4.sup.+ cells is mediated by the chemokine receptor CC-CKR-5", *Nature* 381:667-674.

Erickson et al., 1990, "Design, activity, and 2.8 .ANG. crystal structure of a C.sub.2 symmetric inhibitor complexed to HIV-1 protease", *Science* 249:527-533.

Feng et al., 1996, "HIV-1 entry cofactor: Functional cDNA cloning of a seven-transmembrane, G protein-coupled receptor", *Science* 272:872-877.

Gallo et al., 1984, "Frequent detection and isolation of cytopathic retroviruses (HTLV-III) from patients with AIDS and at risk for AIDS", *Science* 224:500-503.

Gardner et al., 1981, "The complete nucleotide sequence of an infectious clone of cauliflower mosaic virus by M13mp7 shotgun sequencing", *Nuc. Acids Res.* 9:2871-2888.

Gerard & Gerard, 1994, "The pro-inflammatory seven-transmembrane segment receptors of the leukocyte", *Curr. Opin. in Immunol.* 6:140-145.

Goff et al., 1981, "Isolation and properties of Moloney murine leukemia virus

mutants: Use of a rapid assay for release of virion reverse transcriptase", J. Virol. 38:239-248.

Gong et al., 1996, "RANTES and MCP-3 antagonists bind multiple chemokine receptors", J. Biol. Chem. 271:10521-10527.

Guyader et al., 1987, "Genome organization and transactivation of the human immunodeficiency virus type 2", Nature 326:662-669.

Hammerskjold & Rekosh, 1989, "The molecular biology of the human immunodeficiency virus", Biochem. Biophys. Acta 989:269-280.

R. Horuk, 1994, "Molecular properties of the chemokine receptor family", Trends Pharmacol. Sci. 15:159-165.

Horuk et al., 1994, "Identification and characterization of a promiscuous chemokine-binding protein in a human erythroleukemic cell line", J. Biol. Chem. 269:17730-17733.

Hwang et al., 1991, "Identification of the envelope V3 loop as the primary determinant of cell tropism in HIV-1", Science 253:71-74.

Kahn et al., 1990, "The safety and pharmacokinetics of recombinant soluble CD4 (rCD4) in subjects with the acquired immunodeficiency syndrome (AIDS) and AIDS-related complex", Ann. Int. Med. 112:254-261.

Kelner et al., 1994, "Lymphotactin: A cytokine that represents a new class of chemokine", Science 266:1395-1399.

Kim et al., 1995, "V3-Independent determinants of macrophage tropism in a primary human immunodeficiency virus type 1 isolate", J. Virol. 69:1755-1761.

Kitaura et al., 1996, "Molecular cloning of human eotaxin, an eosinophil-selective CC chemokine, and identification of a specific eosinophil eotaxin receptor, cc chemokine receptor 3", J. Biol. Chem. 271:7725-7730.

Klatzmann et al., 1984, "T-lymphocyte T4 molecule behaves as the receptor for human retrovirus LAV", Nature 312:767-768.

Kunz et al., 1991, "The human leukocyte platelet-activating factor receptor--cDNA cloning, cell surface expression, and construction of a novel epitope-bearing analog", J. Biol. Chem. 267:9101-9106.

J.M.A. Lange, 1995, "Triple combinations: Present and future", J. AIDS Synd. & Hum. Retrovirol. 10:S77-82.

Liu et al., 1996, "Homozygous defect in HIV-1 coreceptor accounts for resistance of some multiply-exposed individuals to HIV-1 infection", Cell 86:367-377.

Loestcher et al., 1996, "Chemokine receptor specific for IP10 and mig: Structure, function, and expression in activated T-lymphocytes", J. Exp. Med. 184:963-969.

Maddon et al., 1986, "The T4 gene encodes the AIDS virus receptor and is expressed in the immune system and the brain", Cell 47:333-348.

McDougal et al., 1986, "Binding of HTLV-III/LAV to T4+ T cells by a complex of the 110K viral protein and the T4 molecule", Science 231:382-385.

Miedema et al., 1994, "Changing virus-host interactions in the course of HIV-1 infection", Immunol. Rev. 140:35-72.

Miller & Krangel, 1992, "Biology and biochemistry of the chemokines: A family of chemotactic and inflammatory cytokines", Crit. Rev. in Immunol. 12:17-46.

Mitsuya et al., 1991, "Targeted therapy of human immunodeficiency virus-related disease", FASEB J. 5:2369-2381.

Mitsuya et al., 1990, "Molecular targets for AIDS therapy", Science 249:1533-1544.

P.M. Murphy, 1994, "The molecular biology of leukocyte chemoattractant receptors", Annu. Rev. Immunol. 12:593-633.

Neote et al., 1993, "Identification of a promiscuous inflammatory peptide receptor on the surface of red blood cells", J. Biol. Chem. 268:12247-12249.

Neote et al., 1993, "Molecular cloning, functional expression, and signaling characteristics of a C-C chemokine receptor", Cell 72:415-425.

Neote et al., 1994, "Functional and biochemical analysis of the cloned duffy antigen: Identity with the red blood cell chemokine receptor", Blood 84:44-52.

O'Brien et al., 1990, "HIV-1 tropism for mononuclear phagocytes can be determined by regions of gp120 outside the CD4-binding domain", Nature 348:69-73.

Oravec et al., 1996, ".beta.-chemokine inhibition of monocytoprotropic HIV-1 infection", J. Immunol. 157:1329-1332.

Pal et al., 1993, "Conformational perturbation of the envelope glycoprotein gp120 of human immunodeficiency virus type 1 by soluble CD4 and the lectin succinyl Con A", Virol. 194:833-837.

Paxton et al., 1996, "Relative resistance to HIV-1 infection of CD4 lymphocytes from persons who remain uninfected despite multiple high-risk sexual exposures", *Nature Med.* 2:412-417.

Perelson et al., 1996, "HIV-1 dynamics in vivo: Virion clearance rate, infected cell life-span, and viral generation time", *Science* 15:1582-1586.

Ponath et al., 1996, "Cloning of the human eosinophil chemoattractant, eotaxin", *J. Clin. Invest.* 97:604-612.

Ponath et al., 1996, "Molecular cloning and characterization of a human eotaxin receptor expressed selectively on eosinophils", *J. Exp. Med.* 183:2437-2438.

Power et al., 1995, "Molecular cloning and functional expression of a novel cc chemokine receptor cDNA from a human basophilic cell line", *J. Biol. Chem.* 270:19495-19500.

Proudfoot et al., 1996, "Extension of recombinant human RANTES by the retention of the initiating methionine produces a potent antagonist", *J. Biol. Chem.* 271:2599-2603.

Rossi et al., 1997, "Identification through bioinformatics of two new macrophage proinflammatory human chemokines", *J. Immunol.* 158:1033-1036.

Samson et al., 1996, "Molecular cloning and functional expression of a new human cc-chemokine receptor gene", *Biochem.* 35:3362-3367.

Sattentau & Moore, 1993, "The role of CD4 in HIV binding and entry", *Philos. Trans. R. Soc. London (Biol.)* 342:59-66.

T.J. Schall, 1991, "Biology of the RANTES/SIS cytokine family", *Cytokine* 3:165-183.

Schooley et al., 1990, "Recombinant soluble CD4 therapy in patients with the acquired immunodeficiency syndrome (AIDS) and AIDS-related complex", *Ann. Int. Med.* 112:247-253.

Simon et al., 1991, "Diversity of G proteins in signal transduction", *Science* 252:802-807.

Smith et al., 1987, "Blocking of HIV-1 infectivity by a soluble, secreted form of the CD4 antigen", *Science* 238:1704-1707.

Teich et al., 1984, *RNA Tumor Viruses* Weiss et al. (eds.), CSH-Press, pp. 949-956.

H. Varmus, 1988, "Retroviruses", *Science* 240:1427-1439.

Weiss et al., 1996, "HIV receptors and the pathogenesis of AIDS", *Science* 272:1885-1886.

Willey et al., 1988, "In vitro mutagenesis identifies a region within the envelope gene of the human immunodeficiency virus that is critical for infectivity", *J. Virol.* 62:139-147.

Yarchoan et al., 1989, "Phase 1 study of the administration of recombinant soluble CD4 (rCD4) by continuous infusion to patients with AIDS or ARC", *Proc. 5th Int. Conf. on AIDS MCP* 137, p. 564.

Yoshida et al., 1995, "Molecular cloning of a novel C or  $\gamma$  type chemokine, SCM-1", *FEBS Lett.* 360:155-159.

Zhang et al., 1996, "HIV-1 subtype and second-receptor use", *Nature* 383:768.

Fahey et al., *Clin. Exp. Immunol.* 88:1-5, 1992.\*

Fox, J.L., *Bio/Technology* 12:128, Feb. 1994.\*

Haynes et al., *Ann. Med.* 28:39-41, 1996.

ART-UNIT: 168

PRIMARY-EXAMINER: Park; Hankyel T.

ATTY-AGENT-FIRM: Hultquist; Steven J. Barrett; William A.

#### ABSTRACT:

The present invention relates to therapeutic compositions and methods for treating and preventing infection by an immunodeficiency virus, particularly HIV infection, using chemokine proteins, nucleic acids and/or derivatives or analogues thereof.

47 Claims, 0 Drawing figures

**WEST**☐ **Generate Collection**

L1: Entry 1 of 2

File: USPT

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TITLE: Method for detecting analytes

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FIELD-OF-SEARCH: 436/503, 436/505, 436/507, 436/509, 436/518, 436/528, 436/533, 436/800, 436/838, 436/879, 436/827, 436/828, 436/537, 436/538, 436/540, 436/546, 436/524, 436/532, 435/7.93, 435/7.94, 435/7.95, 435/7.92, 435/7.32, 435/7.1, 435/7.2, 435/7.5

## PRIOR-ART-DISCLOSED:

## U.S. PATENT DOCUMENTS

☐ Search Selected☐ Search ALL

PAT-NO	ISSUE-DATE	PATENTEE-NAME	US-CL
<input type="checkbox"/> <u>3654090</u>	April 1972	Schuurs et al.	195/103.5
<input type="checkbox"/> <u>3817837</u>	June 1974	Rubenstein et al.	195/103.5
<input type="checkbox"/> <u>3996345</u>	December 1976	Ullman et al.	424/12
<input type="checkbox"/> <u>4020151</u>	April 1977	Bolz et al.	424/1.5
<input type="checkbox"/> <u>4062935</u>	December 1977	Masson et al.	424/12
<input type="checkbox"/> <u>4184849</u>	January 1980	Cambiaso et al.	23/230
<input type="checkbox"/> <u>4228237</u>	October 1980	Hevey et al.	435/7

<input type="checkbox"/>	<u>4271140</u>	June 1981	Bunting	424/1
<input type="checkbox"/>	<u>4275149</u>	June 1981	Litman et al.	435/7
<input type="checkbox"/>	<u>4318980</u>	March 1982	Boguslaski et al.	435/7
<input type="checkbox"/>	<u>4506009</u>	March 1985	Lenhoff et al.	435/7
<input type="checkbox"/>	<u>4659678</u>	April 1987	Forrest et al.	436/512
<input type="checkbox"/>	<u>4778751</u>	October 1988	El Shami et al.	435/7
<input type="checkbox"/>	<u>4855242</u>	August 1989	Soeldner	436/539
<input type="checkbox"/>	<u>4868104</u>	September 1989	Kurn et al.	435/6
<input type="checkbox"/>	<u>4935339</u>	June 1990	Zahradnik	435/5
<input type="checkbox"/>	<u>4959303</u>	September 1990	Milburn et al.	435/7
<input type="checkbox"/>	<u>5141850</u>	August 1992	Cole et al.	436/525
<input type="checkbox"/>	<u>5185243</u>	February 1993	Ullman et al.	435/6
<input type="checkbox"/>	<u>5200318</u>	April 1993	Rabin et al.	435/7.21
<input type="checkbox"/>	<u>5212063</u>	May 1993	Ofenlock-Hahnle et al.	435/7.5
<input type="checkbox"/>	<u>5332679</u>	July 1994	Simons et al.	436/518
<input type="checkbox"/>	<u>5340716</u>	August 1994	Ullman et al.	435/6
<input type="checkbox"/>	<u>5378608</u>	January 1995	Marui et al.	435/7.5
<input type="checkbox"/>	<u>5407802</u>	April 1995	Eisenbarth et al.	435/7.21
<input type="checkbox"/>	<u>5475086</u>	December 1995	Tobin et al.	530/325
<input type="checkbox"/>	<u>5512447</u>	April 1996	Baekkeskov et al.	435/7.4
<input type="checkbox"/>	<u>5516638</u>	May 1996	Urnovitz et al.	435/7.32
<input type="checkbox"/>	<u>5525473</u>	June 1996	Hill et al.	N/A
<input type="checkbox"/>	<u>5538854</u>	July 1996	Faustman	435/7.24
<input type="checkbox"/>	<u>5547847</u>	August 1996	Hagopian et al.	435/7.4
<input type="checkbox"/>	<u>5561049</u>	October 1996	Vold et al.	435/7.1
<input type="checkbox"/>	<u>5589574</u>	December 1996	Wolfert et al.	530/388.26
<input type="checkbox"/>	<u>5614368</u>	March 1997	Ghazarossian et al.	435/7.5
<input type="checkbox"/>	<u>5627080</u>	May 1997	Cheng et al.	436/534
<input type="checkbox"/>	<u>5645998</u>	July 1997	Atkinson et al.	435/7.4
<input type="checkbox"/>	<u>5648213</u>	July 1997	Reddy et al.	435/6
<input type="checkbox"/>	<u>5674692</u>	October 1997	Baekkeskov et al.	435/7.21
<input type="checkbox"/>	<u>5674978</u>	October 1997	Tobin et al.	530/326
<input type="checkbox"/>	<u>5696264</u>	December 1997	Albarella et al.	544/257
<input type="checkbox"/>	<u>5705626</u>	January 1998	Tobin et al.	536/23.5
<input type="checkbox"/>	<u>5723304</u>	March 1998	Abuknesha	435/7.9
<input type="checkbox"/>	<u>5723343</u>	March 1998	Maclaren et al.	436/506
<input type="checkbox"/>	<u>5723344</u>	March 1998	Mabilat et al.	436/518
<input type="checkbox"/>	<u>5731147</u>	March 1998	Bard et al.	435/6

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Knoll et al.

435/7.1

## FOREIGN PATENT DOCUMENTS

FOREIGN-PAT-NO	PUBN-DATE	COUNTRY	US-CL
0 322 813 A2	December 1988	DEX	
0 070 527 A1	January 1983	EPX	
0 168 689 A2	January 1986	EPX	
0 410 893 A2	January 1991	EPX	
0 515 194 A2	November 1992	EPX	
WO 9007117 A1	June 1990	WOX	
WO 9205446 A1	April 1992	WOX	
WO 9413804 A1	January 1994	WOX	

## OTHER PUBLICATIONS

Atkinson, et al., Lancet 335:1357-1360 (1990).  
Cho, B.K., et al., Bio Conjugate Chem. (1997) 8(3), 338-346.  
Cuatrecasas, J. Biol. Chem. 245:3059 (1970).  
Dafforn, A., et al., Clinical Chemistry vol. 36, pp. 1312-1316, 1990.  
Huang, W., et al., Anal. Chem. (1996) 68(9), 1646-1650.  
Kurn, N., et al., J. Bone & Mineral Research vol. 9, Sup 1, p S402.  
Libyh, M., et al. Fr. Blood (1997) 90(10), 3978-3983.  
Linacre, P., et al., Methodol. Surv. Biochem. Anal. (1992) 22 (Bioanal. Approaches Drugs, Inc., Anti-Astamatics Metab.), 325-6.  
Mehta, H.B., et al., Clin. Chem. 42, 263 (1996).  
Milstein and Kohler, Nature 256:495-7 (1975).  
Nakamura, et al., Arch. Pathol. Lab. Med. 112:869-877 (1988).  
Ullman, E.F., et al. PNAS vol. 91, pp. 5426-5430, 1994.  
Wallace, A., et al., Pept. Res. 7(1), 27-31 (1994).  
Takeuchi, T, et al., "Enzymatic Solid-Phase Assay for Biotin and a Biotin-Benzodiazepine Conjugate" Bioconjugate Chem., vol. 1, No. 4, (Jul./Aug. 1990), pp. 227-230.  
Fayer, B. et al., "etermination of Humanized Anti-Tac In Human Serum By A Sandwich Enzyme Linked Immunosorbent Assay", Journal of Immunological Methods, vol. 186, (Mar. 8, 1995), pp. 47-54.  
Hansen, S.I., et al., "Quantification of Bitin in Serum by Competition with Solid-Phase Biotin for Binding to Peroxidase-Avidin Conjugate", Clinical Chemistry, vol. 35, No. 8 (1989), pp. 1721-1722.  
Bayer, E.A. et al., "A Sensitive Enzyme Assay for Biotin, Avidon and Streptavidin" Analytical Biochemistry 154, (1986), pp. 367-370.  
Nyalala, J.O., et al., "Indirect Enzyme-Linked Method for Determining Biotin in Human Serum" Journal of Immunoassay, vol. 18 (1) (1997), pp. 1-19.  
Dooley, Steven, et al., "A Simple and Sensitive Enzyme-Mediated Assay of Biotin", BioTechniques, vol. 13, No. 4, (1992), pp. 543 546.  
Mehta, H. B., et al., "DELISA: Sensitive Nonisotopic Assay for GAD.sub.65 Autoantibodies, a Key Risk-assessment Marker for Insulin-dependent Diabetes Mellitus" Clinical Chemistry 42:2, (1996), pp. 263-269.  
Remy, I. et al., "Potentiality of an Organometallic Labeled Streptavidin-Biotin System in Metalloimmunoassay" Fr. J. Pharm. Biomed. Anal. (1991) 9 (10-12), 965-7 (abstract) only.  
Tanaka, S., et al., "Non-isotopic receptor asay for benzodiazepines using a biotin-labed igand and biotin-immobilized microtiter plate", J. Chromatogr (1992), 597 (1-2), 443-8 (abstract) only.  
English Language Abstract of DE 3629194.  
English Language Abstract of CA 2004094.  
English Language Abstract of DE 3829245.  
English Language Abstract of JP 4249770.  
Abstract of WO 9732984.  
Abstract of US 5645998.  
Abstract of US 5512447.

Abstract of WO 9609552.  
Abstract of WO 9507464.  
Abstract of 9007117.  
English language Abstract of RO 95315.  
English language Abstract of DE 2902400 A.  
English language Abstract of EP 201079.  
Abstract of WO 8804777.  
Abstract of WO 9403530.  
Abstract of WO 9402515.  
English language Abstract of EP 574000.  
English language Abstract of JP 04066871 A2-920303.  
English language Abstract of JP 04066870 A2-920303.  
Abstract of US 5296347.  
English language Abstract of EP 93 572217.

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ABSTRACT:

The invention relates to methods of determining the presence or amount of an analyte in a sample suspected of containing the analyte, said method comprising the steps of: (a) bringing together in an aqueous medium to form a mixture: (i) the sample; (ii) at least one specific binder for the analyte; (iii) a first binding agent coupled to either (1) exogenous analyte or (2) the specific binder for the analyte; (iv) a support comprising a second binding agent; b) adding an activator to the mixture, wherein the activator binds the first binding agent and the second binding agent of the support to immobilize the first binding agent; c) determining the amount of the analyte in the sample by detecting the immobilized first binding agent, the presence or amount thereof being related to the presence or amount of the analyte in the sample.

32 Claims, 0 Drawing figures